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EXAMINER

NADKARNI, SARVESH J

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2629

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/764,241	Applicant(s) CHANG, CHIEN-JEN	
	Examiner Sarvesh J. Nadkarni	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

This Office Action is in response to the Amendment filed July 19, 2007, in relation to Application Number: 10/764,241 (hereinafter referred to as "amendment"). No claims have been cancelled. Claims 16-19 have been newly added. Claims 1 and 8 have been amended. Therefore, claims 1-19 are currently pending.

NOTE: This case has been transferred to Examiner Sarvesh J. Nadkarni; although Applicant may notice formatting and stylistic changes from the First Office Action, substantive matters have been addressed in accordance with guidelines as established by the MPEP, and further, in accordance with Applicant's amendment.

Claim Rejections - 35 USC § 103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 7-10, and newly added claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori (U.S. 2003/0025718 A1) and further in view of Hong (US 2003/0006952 A1).

3. In claim 1, as amended, Mori teaches a **method for dynamic gamma adjustment of an LCD** (display panel - 1 - Fig. 1) **having a data driver** (PMW pulse control unit - 8 and. column

wire switch unit -11 - see [0040]) **and a gate driver** (row select control unit - 12 and row drive output SW unit - 13 - see [0041]) **comprising the following steps:**

detecting a brightness data (mean brightness detection unit - 33) **of a data signal** (digital video image signal - S2 and mean brightness - S6) **provided by the data driver** (see [0038]);

classifying the brightness data into predetermined brightness groups (brightness multiplier of the system control unit- 21 in conjunction with the brightness control value and brightness suppression coefficient; see [0044]);

providing the gamma signal (display signal- S10) **to the data driver** (see [0040]).

4. However, Mori differs from the claimed invention in that Mori does not explicitly teach **providing a group of predetermined gamma signals according to the predetermined brightness group** and **selecting a gamma signal from the group of predetermined gamma signals according to the brightness data.**

5. In the same field of endeavor, Hong clearly teaches **providing a group of predetermined gamma signals according to the predetermined brightness group** (see Hong page 3, paragraphs [0042]-[0045] further illustrated in FIG. 5) and **selecting a gamma signal from the group of predetermined gamma signals according to the brightness data** (see Hong FIG. 5, element 36, further described on page 3, paragraphs [0045]-[0047] describing operation of switch 36).

6. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have been motivated to incorporate gamma signal selection method as

taught by Hong into the display method of Mori because both are within the same field of endeavor, and furthermore, because Hong's gamma selection improves image quality though improved viewing angle, a common goal within the art. (see Hong Abstract and further at page 2, paragraphs [0023]-[0024])

7. Claim 8, as amended, differs from claim 1 as amended and the claims therefrom depending in that claim 1 and claims depending therefrom are method claims whereas claim 8 and the claims depending therefrom are apparatus claims. Generally both claims 1 and 8 contain the same limitations and are similarly analyzed. Therefore, claim 8 is rejected by Mori in view of Hong. Mori in view of Hong teaches:

a brightness sampling circuit (see Mori, mean brightness detection unit- 33) **for detecting a brightness data of a data signal provided by the data driver** (see Mori [0039] and Fig. 1);

a brightness classifying circuit (see Mori, brightness multiplier of the system control unit- 21) **for classifying the brightness data** (see Mori, brightness control value) **into a predetermined brightness group** (see Mori, brightness suppression coefficient) - (see [0044])

a plurality of gamma voltage outputting circuits respectively providing a predetermined gamma signal (see Hong page 3, paragraphs [0042]-[0045] further illustrated in FIG. 5 elements 32 and 34);

and a gamma decision circuit for selecting one of the gamma voltage outputting circuits to provide the corresponding predetermined gamma signal of the

predetermined brightness group to the data driver (see Hong FIG. 5, element 36, further described on page 3, paragraphs [0045]-[0047] describing operation of switch 36).

8. In claims 7 and 9, Mori teaches **the data signal [S2, S3, S4, S10] is a digital signal** (see Mori [0039] and [0043]).

9. In claim 10, Mori teaches **the brightness sampling circuit obtains the brightness data by analyzing the digital signal** (see Mori [0039]).

10. With regard to newly added claim 16, Mori in view of Hong clearly teaches **the method as claimed in claim 1** (see above), **wherein the brightness data is detected by sampling only a portion of a single frame** (see Hong at page 3 paragraphs [0040]-[0042] describing sampling of single frame).

11. With regard to newly added claim 17, Mori in view of Hong clearly teaches **the method as claimed in claim 1** (see above), **wherein the brightness data is detected by sampling several frames** (see Hong at page 3, paragraphs [0040]-[0042] describing sampling of several frames).

12. With regard to newly added claim 18, it is similarly analyzed as claim 16 above and therefore rejected under the same rationale.

13. With regard to newly added claim 19, it is similarly analyzed as claim 17 and therefore rejected under the same rationale.

14. Claims 2-3 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori in view of Hong further in view of Nishitani, et. al (U.S. 6,850,214 B2).

15. As to claims 2 and 11, note the discussion of Mori in view of Hong in claims 1 and 8 above. Mori in view of Hong does not explicitly teach gray-level distribution. Nishitani teaches the brightness data (luminance data) representing a single frame (see col. 9, lines 15-57). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have added the gray-level distribution of a single frame of Nishitani to the brightness data of Mori in view of Hong because the gradation of inputted video data can be corrected in accordance with the brightness characteristic, thereby the conspicuous or clear impression of the displayed image quality (see col.5, lines41-44 of Nishitani).

16. As to claims 3 and 12, Nishitani teaches the brightness data (luminance data) representing an average level of distribution of a plurality of frames (see col. 7, lines 10-15, col. 9, lines 4-22).

17. Claims 4-15 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori in view of Hong and further in view of Kim, et. al (U.S. 2003/0151565 A1).

18. As to claims 4 and 13, note the discussion of Mori in view of Hong in claims 1 and 8 above. Mori in view of Hong does not explicitly teach the gamma signal enhancing the brightness resolution of a low gray level. Kim teaches the gamma signal enhances the brightness resolution of a low gray level when the brightness data belongs to a low gray level (see [0152 - Fig. 33 - Gamma curve C of Kim]). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have added the enhanced brightness resolution of a low gray level of Kim to the gamma signal of Mori in view of Hong because the brightness of a lower gray level is enhanced much more to thereby prevent deterioration of the image at a low gray level (see [0152] and Fig. 33 of Kim).

19. As to claims 5 and 14, Kim teaches the gamma signal enhancing the brightness resolution of a high gray level when the brightness data belongs to a high gray level (see [0152 - Fig. 33 - Gamma curve A of Kim]). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have added the enhanced brightness resolution of a high gray level of Kim to the gamma signal of Mori in view of Hong so that distribution upper gray level is prevented from saturating and an output image distortion is avoided (see [0164], [0152], and Fig.33 of Kim). 8. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori in view of Moon (U.S. 2002/0180680 A1).

20. As to claims 6 and 15, note the discussion of Mori in view of Hong in claims 1 and 8 above. Mori in view of Hong does not explicitly teach the gamma signal adjusts a voltage level. Moon teaches gamma signal adjusting a voltage level of the data signal presenting a predetermined gray level (see [0115 - 0116 of Moon]). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have added the voltage level gamma adjustment of Moon to the gamma signal of Mori in view of Hong because the gamma curve can be controlled to have a predetermined gamma constant without any loss in the gray scale data (see [0096-0097 of Moon]).

Response to Arguments

21. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new grounds of rejection.

Conclusion

22. As previously noted in the First Office Action, the prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

- Kim, et. al (U.S. 2003/0058211 A1) discloses a LCD display and driving method regarding gray level correction values.
- Yoshinaga, et. al. (U.S. 200210063670 A1) discloses a means for comparing brightness levels in a LCD display device. • Yamazaki, et. al., (U.S. 2002/0011978 A1) discloses a display device capable on controlling luminance response to surrounding brightness levels.

23. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarvesh J. Nadkarni whose telephone number is 571-270-1541. The examiner can normally be reached on 8:00-5:00 M-Th EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571-272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sarvesh J. Nadkarni
Examiner – Art Unit 2629


AMARE MENGISTU
SUPERVISORY PATENT EXAMINER